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To provide material for decision or policy-makers with questions concerning policy, applications, and/or operations in the field of individualized instruction, 31 published books, journals and ERIC documents are listed and annotated. 32 Elementary Secondary Education Act Title III innovative projects described in PACE abstracts are listed by ES number. Emphasis is placed on systems requirements of individualized instruction with special attention to different types of media. All material noted was published between 1964 and 1968. (JY)

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INDIVIDUALIZED INSTRUCTION:

AN ANNOTATED BIBLIOGRAPHY

By Serena E. Wade

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INDIVIDUALIZED INSTRUCTION: AN ANNOTATED BIBLIOGRAPHY

Individualization of instruction has been defined as the use of information about individual differences to prescribe appropriate educational environments.[1] The process includes specification of objectives in terms of observable competence, detailed diagnosis of learner characteristics, provision of alternative instructional procedures, and continuous assessment of learner progress.

Individualization as an instructional strategy involves the entire instructional system--organization, personnel, and materials--and appropriate consideration should be given to each of these elements. The scope of the subject, though, is so broad as to require arbitrary limitation. The materials reported in this bibliography deal with three questions:

1) Why should instruction be individualized (policy considerations)?

2) How can instruction be individualized (application considerations)?

3) What are some examples of individualized instruction (operation considerations)?

In each of these three categories a broad view of the instructional system has been taken. The bibliography has been developed for the policy-maker and decision-maker rather than the practitioner, although the examples of operational programs provide models for practical study at the local district level.

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[1] Bolvin, John O., and Robert Glaser (of the Learning Research and Development Center at the University of Pittsburgh), "Developmental Aspects of Individually Prescribed Instruction," *Audio Visual Instruction*, Vol. 13, October, 1968, p. 829.

Heavy contributions from associated disciplines need to be recognized in this review. Needless to say, the discipline of programed learning, with the associated technical capacity of computer-assisted instruction, has contributed to the theoretical foundation and practical application of individualization. Then there are also the school organizational patterns, such as modular grouping, flexible scheduling, and non-graded classrooms, that have been attempts at individualization on a limited scale. Neither of these subjects will be directly addressed here, nor will individualized programs specific to a single subject area be covered, with the exception of reading, which forms the basis of the elementary curriculum.[2]

Since the major functional requirement of individualized programs is a wide variety of instructional materials, the role of media in providing this variety cannot be overemphasized. The instructional materials center becomes a focal point of curriculum prescriptions for each student. Bolvin and Glaser are quick to note that group instruction or tutoring is the only teaching technique possible without the availability of self-study materials.

In this bibliography, then, the emphasis will be on system requirements for individualized instruction, with special attention given to different types of media use. The search for materials to answer the questions of policy, applications, and operations in individualized programs has been confined to three sources: published books and

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[2] A recent bibliography of books, pamphlets and journal articles covering school organization patterns, specific subject areas, and general references on independent study has been prepared by Lillian K. Spitzer, Institute for Development of Educational Activities (IDEA). The IDEA bibliography complements the present paper and covers a greater time span (from 1962 to current periodicals); it places no special emphasis on instructional materials or educational media, however, and it does not include ERIC documents. Readers interested in pursuing individualization might wish to consult *Pacesetters in Innovation* for detailed information about the IDEA projects listed at the end of this paper.

journals, ERIC documents, and E.S.E.A. Title III innovative projects listed in PACE abstracts.[3] Each of these types of source is listed under organizational rubrics. ERIC documents are listed by ED numbers, with complete abstracts. PACE programs are referenced by ES numbers, without full project descriptions. Published literature is appropriately listed by author, source, and date. Whenever there was any choice, the most recent document was chosen for inclusion.

To conclude their brief introduction to the nature of individualized instruction, Bolvin and Glaser comment that the programs in the 1970s will be quite different from what they are today. Where the current emphasis is on achievement testing, later developments are likely to concentrate on learner characteristics. The transformation of the schoolroom into a resource center capable of filling the most diverse needs will occur through a growing variety of educational materials. Where only limited information is now available to the teacher, much faster and more systematic information will become available as a result of computer processing. The University of Pittsburgh Learning Research and Development Center can be expected to maintain its position as a primary source of up-to-date information on individualized instruction.

1. WHY SHOULD INSTRUCTION BE INDIVIDUALIZED?

In a number of the reports issued through the Learning Research and Development Center, University of Pittsburgh, Robert Glaser stresses the necessity of education for individuals. The concern of educators with adapting to the needs of the student, Glaser says, is an all too-familiar theme which provides the justification and basic premise for many current educational innovations and experiments. The need to understand the

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[3] ERIC and PACE retrieval terms used: individual instruction, individual needs, individualized programs, independent study. The terms are cross-referenced.

background, history, pedagogical requirements, psychological facts, technical instructional requirements, and administrative structures of successful systems for the education of individuals has never been more critical. The theoretical rationale of individualized instruction and the policy considerations necessary for thorough understanding are reported in the references to follow. The potential of individualized systems, according to Glaser, lies in a balance between teacher guidance and the student's own self-appraisal. Together, the teacher and student embark on a cooperative adventure in learning.

Published Literature

Review of Educational Research, June, 1966.

Entire issue on curriculum planning and development. Discusses educational materials in terms of focus on student. Major variables involved in curriculum design are identified. General conclusion states that focus should be on entire curriculum rather than specific subject matter when student-centered programs are considered.

Goodlad, John I. *Diagnosis and Prescription in Educational Practice*. N.J.: Educational Testing Service, 1966.

Emphasis is placed on the identification of new concepts to organize curriculum--inductive processes of teaching and learning and a diversified instructional package comprising textbooks, workbooks, laboratory experiments, films, records, and programed materials. The teacher becomes partner, data source, observer, and diagnostician. Recommendations are made for nongrading, cooperative teaching, and flexibility in organization.

Review of Educational Research, April, 1968.

This issue, which was sponsored by ERIC at Stanford, was devoted to

educational media and technology, and has a relevant section on educational objectives and educational media as they relate to individualized instruction. The bibliographies are particularly helpful in their comprehensive coverage of recent articles dealing with the components of curriculum individualization.

"New Teaching Strategies," *Audio-Visual Instruction*, October, 1968.

This issue covers developmental aspects of individualized instruction, instructional strategies, learning systems and diagnostic teaching. The background information by Bolvin and Glaser is one of the better introductions available for a clear overview of individualization objectives. Two programs are described, with application models, and a set of criteria for decision-makers is presented.

ERIC Documents[4]

ED 014 340 Heffernan, Helen. "The Diverse Needs of the Learners to be Served." 1967.

One of the goals of education is helping every learner achieve his individual potential. In directing effort toward this goal, educational leaders must identify and meet diverse needs in the following areas--(1) the maturity of the learner, (2) his physical and social environment, (3) his family background, (4) his physical condition, and (5) individual differences in ability, interest, aptitude and aspiration. Enrollment growth in junior colleges and adult education classes, increased emphasis on education of the disadvantaged, and pre-school programs are cited as trends in education in the twentieth century. Children from poverty-stricken homes, migrant children, and children

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[4] Information on how to order ERIC documents is available free from ERIC at Stanford.

whose parents speak another language present different kinds of educational challenges to the schools. The major responsibility is seen as the prevention of failure. This requires learning activities which are highly individualized, freedom from rigid grade standards, and a closer home school relationship. (This speech was delivered at the National Conference on Rural Education at Oklahoma City on October 2, 1967.)

ED 014 785 Glaser, Robert. "The Education of Individuals." Pittsburg Univ., Pa., Learning Research and Development Center, 1966.

Inertia and practical difficulties have prevented a variety of individualized education programs from achieving their goal of providing an opportunity for individuals at every level of ability to realize their potentials and to perform at their best. Effective individualized education should provide a system of individualized instruction which nurtures independent learning and a learning environment adapted to the needs of each student. Patterns of individualized instruction have varied from the relatively inflexible program where students are dropped as they reach their presumed levels of achievement, to track plans and individually tailored instructional treatments. Recommendations include (1) redesigned grade level boundaries and time limits for subject matter coverage, (2) well-defined sequences of behaviorally defined objectives as study guides for individual students, (3) adequate evaluation of a student's progress through a curriculum sequence, (4) instructional materials appropriate for self-directed learning, (5) professional training of school personnel in student evaluation and guidance, and (6) use by teachers of student profiles, automation, and other special techniques to design individualized instructional programs.

ED 015 844 Glaser, Robert. "Objectives and Evaluation--an Individualized System." Pittsburgh Univ., Pa. Learning Research and Development Center, 1967.

The most important factor in improving educational attainment is the analysis and specification of educational objectives and learning

outcomes. The definition of instructional objectives for the curriculum designer, teacher, and student serves as a guide for attaining goals. When information about student performance is the basis for curriculum design, student performance must be diagnosed beyond the measurement of student standing within a group. Work needs to be done in developing criterion-referenced tests in order to assess the outcomes of learning. (This article is a reprint from "Science Education News," June, 1967.)

2. HOW CAN INSTRUCTION BE INDIVIDUALIZED?

The application of individualized instruction to the schools involves the consideration of many variables, commonly presented under the headings of student diagnosis, program management, and evaluation of educational achievement. The documents outlined below review these application considerations in some detail, and present various implementation guidelines.

Published Literature

Review of Educational Research, June, 1967.

This issue is devoted to teaching personnel, and deals with staff utilization and teacher roles in terms of student-centered programs. Other references are included.

Audio-Visual Instruction, October, 1967.

This issue is devoted to learning centers as the key to personalized instruction.

Audio-Visual Instruction, March, 1968.

This issue is devoted to implications of individualized instruction for curriculum design and teacher roles.

Bloom, Benjamin. "Learning for Mastery," *UCLA Evaluation Comment*, May, 1968.

This is a consideration of one approach to learning, and the underlying theoretical concepts, research findings, and techniques required. It describes the basic task of determining what is meant by mastery of a subject and searching for the methods and materials which will enable the largest proportion of students to attain such mastery. This article considers such variables for mastery learning strategies as aptitude for particular kinds of learning, quality of instruction, ability to understand instruction, perseverance, and time allowed for learning. One strategy is outlined that accounts for each of these variables with specifications of preconditions, operating procedures (including alternative learning resources), and outcomes. This is a capsule version of all considerations important to the individualization of instruction.

ERIC Documents

ED 010 208 Glaser, Robert and others. "Studies in the Use of Programmed Instruction in the Classroom." Univ. of Pittsburg, Pa. Learning Research and Development Center, 1966.

During the school year of 1963-64, the Learning Research and Development Center (University of Pittsburgh) and the Baldwin-Whitehall Public Schools of Pittsburgh initiated an experimental project to investigate the feasibility of a system of individualized instruction in an entire K-6 school. Part one describes the initial work on the use of programed material in an intact classroom. Specific studies in arithmetic and spelling and the investigation of student variables such as attention, attitude, and aptitude are described. A sociological

study of some of the unanticipated consequences of educational innovation on supervision, teachers, and school organization also is presented. Part two describes exploratory studies on the individualization of instruction in flexible classroom contexts. Implications for the use of programed instruction were (1) procedures need to be developed to permit effective management of individualized progress, (2) procedures should include detailed diagnostic assessment of student capability, (3) research and development should be directed to methodology for evaluation of educational achievement, and (4) achievement tests should emphasize performance mastery, and subsequent use and reuse of knowledge and skills.

ED 011 474 "Individualizing Instruction in Small Schools." Western States Small Schools Project, 1966.

This document discusses procedures and potentials for individualizing instructional programs in small rural schools. Four factors are seen to operate in the individualization process. These are the instructor, the curriculum and supplementary materials, administrative practice, and physical facilities. New instructional procedures should be instituted with a concomitant redefinition of the role of the teacher. It is suggested that the curriculum be reorganized into a common curriculum to be taken by every student, an alternative curriculum to meet the needs of local economic situations, and an individual curriculum to provide opportunities for special skills and talents. Suggestions for administrative reorganization to provide for individual differences are included, ideas for modification of existing facilities, and construction of new physical structures are presented.

ED 010 577 Cogswell, John F. and others. "Analysis of Instructional Systems." Report of a project, New Solutions to Implementing Instructional Media through Analysis and Simulation of School Organization. Final Report. System Development Corp., Santa Monica, Calif., 1966.

The uses of systems analysis and computer simulation of school organization were explored to find new ways to implement instructional media. The uses of systems analysis recommended were (1) to facilitate improvement of present instructional and educational planning systems and (2) to explore the feasibility of proposed school organizations. The recommended procedures for use of systems analysis were (1) define the major overall problem to be solved, (2) model the system, and (3) use the model to study the effects of changes of the system. A technique called "EDSIM" was developed as part of the project to model a system by means of a computer program. Following 11 analyses of school organizations, it was concluded that altering school organizations to accommodate individual differences of students requires (1) adequate self-study instructional materials, and (2) adequate systems to provide information to instructors, counselors, and administrators about the status of individual students. To meet these needs, the investigators recommended (1) continued development of the computer-based system to assist students and counselors in planning, (2) continued study of the use of information processing for student instruction, (3) inservice training of selected school personnel in the preparation of individualized course materials, and (4) development of procedures for the management of changes in schools.

ED 016 003 Esbensen, Thorwald. "Individualizing the Instructional Program." Duluth Public Schools, Minnesota, 1966.

As stressed and illustrated throughout the discussion, an individualized learning program or assignment must include objectives which are expressed in terms of specifically observable behavior. These objectives fall within four categories of intellectual tasks--knowledge, comprehension, application, and invention. To assess a student's achievement of a particular objective or task, the classroom teacher might use a "curriculum map," an example of which is inserted in this report. Individualizing instruction modifies the role of the teacher, and instead of confronting a group of students with a collection of facts, he engages each student

in the actual process of acquiring and generating knowledge. Sample individualized assignments, with objectives expressed in terms of a "criterion performance," are appended.

ED 016 397 Joyce, Bruce R. "Man, Media, and Machines--The Teacher and his Staff." National Education Association, Washington, D. C., 1967.

An organizational model for the school is proposed, placing teachers at the center of the decision-making process and providing them with a supportive staff to help individualize education. In this model, a direct instruction team works with a professional staff, who organize instructional materials and provide consultant help, at the instructional support centers. (Copies of this document may be obtained for $0.75 each from the National Education Association, Publication-Sales Section, 1201 16th St., N.W., Washington, D.C.)

ED 017 396 Newman, Robert E. "The Individualized Approach to Reading Instruction--Key Concepts," 1967.

A detailed outline of key individualized reading principles and guidelines for their application to suburban and inner-city situations are presented. The approach is suggested for graded, team-taught, or self-contained classroom groupings in the total elementary reading curriculum. Two interdependent principles recommend that the child be helped to be on his own to develop at his own pace toward skillful and independent learning and thinking and that there be a two-way instructional relationship between teacher and pupil. Ten guidelines are offered for implementing these principles during the dependent phase, the early independent phase, and the independent phase during which the child learns to think reflectively. A detailed account of "The Riverview School Story" is related as an example of the application of the principles presented.

ED 016 405 Rogers, William A. and Lawrence M. Gariglio. "Toward a Computer Based Instructional System." Saginaw Township Community Schools, Michigan.

The information for this report was obtained from various computer assisted instruction installations. Computer based instruction refers to a system aimed at individualized instruction, with the computer as central control. Such a system has three major subsystems--instructional, research, and managerial. This report emphasizes the instructional subsystem. The three basic components of this subsystem are: breakdown of grade-by-grade curricula, breakdown of static classroom size, and use of computer and other devices to present instructional information.

3. WHAT ARE SOME EXAMPLES OF INDIVIDUALIZED INSTRUCTION?

The prerequisite for individualized instruction is the establishment of school situations adaptable to individual differences. A set of the specific requirements for this adaptation is presented here, taken from a document from the Learning Research and Development Center, University of Pittsburgh:[5]

1) The conventional boundaries of grade levels and arbitrary time units for subject-matter coverage need to be redesigned to permit each student to work at his actual level of accomplishment in a subject-matter area, and to permit him to move ahead as soon as he masters the prerequisites for the next level of advancement.

2) Well-defined sequences of progressive, behaviorally defined objectives in various subject areas need to be established as guidelines for setting up a student's program of study. The student's achievement is defined by his position along this progression of advancement.

3) A student's progress through a curriculum sequence must be monitored by adequate methods and instruments for assessing

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[5] *Learning R & D Center Reprint No. 26.*

his abilities and accomplishments so that a teaching program can be adapted to his requirements.

4) Students must be taught and provided with appropriate instructional materials so that they acquire increasing competence in self-directed learning. To accomplish this, the teacher must provide the student with standards of performance so that he can evaluate his own attainment, and teaching activities must be directed by individual learner accomplishment.

5) Special professional training must be provided to school personnel so that they can accomplish the evaluation, diagnosis, and guidance of student performance that is required to organize instruction for individualized learning--as contrasted to the total-class management of learning.

6) The individualization of instruction requires that the teacher attend to and utilize detailed information about each student in order to design appropriate instructional programs. To assist the teacher in processing this information, it seems likely that schools will take advantage of efficient data processing systems.

The reports that follow are examples of programs in which the requirements for individualized instruction have been at least partially met and the systems have been made operational.

Published Literature

"Oakleaf Teachers Diagnose, Then Prescribe for Pupils," *Nation's Schools*, Vol. 80, September, 1967, pp. 70-72.

The experimental program directed by the Learning Research and Development Center, University of Pittsburgh, is described and pictured.

National Association of Secondary School Principals Bulletin, Vol. 51, September, 1967, pp. 53-62.

With a program in English and history, released time from class for planned independent study produced neither gain nor loss in achievement, even though students were in class less than half the previous amount of time.

See Also: Issues of *Audio-Visual Instruction*, October, 1967, and March and October, 1968.

ERIC Documents

ED 010 519 Glaser, Robert. "The Program for Individually Prescribed Instruction." Pittsburgh Univ., Pa., Learning Research and Development Center, 1966.

Progress during the first year of the Oakleaf Project, an individualized instructional program for elementary school students, is summarized in this interim report. The Oakland Elementary School in suburban Pittsburgh was used as the project laboratory for producing a curriculum in an educational environment which would be responsive to individual differences among children. Subject-matter learning was concentrated on mathematics, reading, and primary-grade science. Self-study materials and diagnostic tests were developed and built into the individualized curriculum. Teachers were responsible for writing prescriptions of learning experiences required for fulfilling each student's individual needs. Tables in the concluding section of the report provide individual student progress data during the project's first year. Related reports are ED 010 205 through ED 010 211, and ED 010 519 through ED 010 523.

ED 010 561 Egbert, Robert L. and John F. Cogswell. "System Design for a Continuous Progress School--Part I." System Development Corp., Santa Monica, Calif., 1964.

The application of system analysis to educational problems of a

continuous progress plan high school is described. This school plan involves a radical departure from the traditional curriculum and an extensive use of new media. Although no fully implemented continuous progress school existed at the time of this report, the Brigham Young University Laboratory School had used parts of the plan at the elementary school, junior high school, and high school levels. The basic content of this report came from interviews with Dr. Edwin Read (who developed the continuous progress school plan) and members of his staff at the Brigham Young University Laboratory School. Flow diagrams that were developed following the interviews are also included in the report. Topics covered were (1) an overview of the continuous progress school, (2) student movement through the school, (3) preregistration and registration procedures, (4) course work in language arts and speech, and (5) special academic functions of test scoring and interpretation.

ED 010 562 Egbert, Robert L. and John F. Cogswell. "System Design for a Continuous Progress School--Part II, Surveillance and Detection System." System Development Corp., Santa Monica, Calif., 1964.

A surveillance and detection system is presented for application to the continuous progress school, developed by Dr. Edwin Read of Brigham Young University. The purpose of this system, part of an information processing center, is (1) to monitor and survey the study activities of students, (2) to detect the presence of real and imminent problems in student performances, and (3) to alert appropriate personnel for action. The system would follow up on student performance of assigned tasks, conduct periodic reviews of student performance to compare actual performance with that expected, and determine the person to be alerted in the event of trouble. Flow diagrams of the system are included in the report.

ED 010 563 Egbert, Robert L. and John F. Cogswell. "System Design for a Continuous Progress School--Part III, the Instructional

Materials Center." System Development Corp., Santa Monica, Calif., 1964.

The instructional materials center (IMC) of the continuous progress school is described. The continuous progress school plan was devised by Dr. Edwin Read and was being developed at the Laboratory School of Brigham Young University. This report describes how an IMC might operate rather than how one is operating or is planned to operate. As conceived, the IMC combines the functions of the library, the book store, the audiovisual center, and the development of materials. Flow diagrams of the planned operation are included.

ED 010 564 Cogswell, John F. and Donald G. Marsh. "System Design for a Continuous Progress School--Computer Simulation of Autonomous Scheduling Procedures." System Development Corp., Santa Monica, Calif., 1966.

A computer simulation of a continuous progress school that permits students to schedule themselves for course work on an autonomous basis was constructed and tested. The system was set up to free the student from the disadvantages of traditional progression by allowing him to work in one course while waiting for teaching assistance in another. Patterns of resource demand were determined for the assignment of 100 high school students to five courses at one time. Whenever such a student would require help, he could file a request for help and go on to his work on another course. The system was deemed useful for expanding simulation capability and for exploring its uses in course design. It was developed in association with the continuous progress school plan of Dr. Edwin Read of the Brigham Young University Laboratory School.

ED 013 663 Coffman, Alice O. and James M. Dunlap. "The Effects of Assessment and Personalized Programming on Subsequent Intellectual Development of Prekindergarten and Kingergarten Children." University City School District, Missouri, 1967.

The objective for this study was to foster prekindergarten children's development through a personalized program based on assessments of each child's developmental skills, using new tests and instructional materials adapted to individual needs. Of four experimental classes, three focused on an area of weakness (motor, auditory-language, or visual) for 20 minutes daily, within a framework of a nursery school program, children with no weakness in these areas were placed in the fourth group which focused on cognitive skill development. Pre-test and post-test data and growth differences were analyzed for the significance of differences among the four experimental classes. Significant gains resulted from programs given to help overcome weaknesses in the experimental children. The experimental group grew significantly in more skills development areas than did the control group. They also grew significantly in skill areas not specifically programmed. The control children with previous nursery school experience gained in more skills development areas than those children without school experience. In general, girls seemed to benefit more than boys from nursery school experience.

ED 015 227 Goss, Dale and Elmo Little. "A Profile of the Seattle Public Schools' New Beacon Learning Center, a School Proposed for the Continuous Educational Progress of Children in Grades Four through Seven." Seattle Public Schools, Washington, 1967.

This profile of the New Beacon Learning Center, an experimental school, describes the "continuous progress concept," a plan to improve educational quality and racial balance, proposed here for the intermediate grades. Several neighborhood schools would provide the student population of this educational complex. The size of the center would make it possible to offer such specialized features as an individualized approach to students, shared equipment, extensive and diversified instructional services, operational economy, and more efficient staff utilization. To counteract impersonality and loss of identity, the center would have a decentralized organization, and students would belong to units which have their own core of teachers, space, and special

services and resources. The profile specifically discusses the organization of the facilities, special resources which would be incorporated, operations policies, staff, and participating schools. Also described are the characteristics of the pupil population, the center's organizational structure, the community resources, some methods for evaluating pupil progress, and the transportation arrangements. One section deals with ability grouping and its relationship to achievement. Tables, charts, and site plans present various features of the proposed center.

ED 016 412 Fall, Charles R. "Individualizing University Instruction, Exploring Computer Potential to Aid College Teachers by Directing the Learning Process," Inter-University Project One, Publications Series. State University of New York, Buffalo College at Buffalo.

This document concludes that instruction by computer-based resource units can facilitate learning and provide the instructor with valuable assistance. By pre-planning the teaching-learning situation, resource units can free the instructor for decision-making tasks. Resource units can also provide appropriate learning goals and study guides to each student.

ED 017 589 "Project Follow Through, an Individualized Instructional Program." A Proposal. Duluth Special School District, No. 3, Minnesota, 1967.

This proposal outlines plans for an individualized instructional program for approximately 100 project headstart graduates. In each of three target area schools a "kindergarten primary laboratory room" will be established where the techniques of student pacing, exploration, and self-selection will be employed. Seven professional staff, eleven para-professionals, and various volunteers will cooperate in a team teaching effort. To increase staff competencies, the program will offer inservice and preservice training. Social and cultural activities and health,

psychological, and social services will be provided for the children and their families. Mothers of the Headstart graduates will participate in weekly group discussions on parent-child relations. Intelligence and achievement tests and a social maturity scale will be used to evaluate pupil progress, and changes in teachers' attitudes will also be assessed. It is hoped that funds will be made available for research on the effects of the parent discussion program on parental attitudes and on the intellectual-social development of the children. An existing "follow-through" program is briefly described.

PACE Projects

The projects listed below are examples of E.S.E.A. Title III programs with individualized instruction components. In each case there is total curriculum involvement, rather than individual prescription in a single subject area. The interested reader may refer to the documents *Pacesetters in Innovation*, 1966 and 1967, to review projects in detail.

ES 000 467	ES 000 784	ES 001 362
000 574	000 840	001 567
000 628	001 285	001 604
000 671	001 295	001 634
		001 842

In a major effort toward instructional innovation, thirty-six demonstration schools are participating in the Institute for Development of Educational Activities (IDEA) research project. The institute is supported by a foundation, in order to assist teachers, school administrators and lay groups with plans for school improvement. The program at each demonstration school will include a nongraded system, variations of instructional group size, continuous progress instruction, new staffing patterns, flexible scheduling procedures, team teaching and independent study. Objectives include developing procedures for initiating research, evaluating and disseminating promising practices,

informing interested schools of new programs, and cooperating with other IDEA schools to increase the effectiveness of activities and profit from each other's experiences. IDEA projects outlined in *Pacesetters in Innovation* are listed below:

ES 001 222	ES 001 361	ES 001 670
001 223	001 450	001 684
001 225	001 491	001 749
001 260	001 537	001 776
001 314	001 553	001 779
001 341	001 592	001 946
		001 973

4. A FINAL COMMENT

This bibliography is highly selective, and the reader interested in specific facets of individualized instruction should use the references provided here as points of departure for further study. The modification of any particular educational system in the interest of greater flexibility, which is the fundamental prerequisite for individualization, is unique to that system.

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